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June 29, 1993

Mr. William F. Caton, Acting Secretary
Federal Communications Commission
1919 M Street, N.W.
Washington, D.C. 20554

In re: PR Docket No. 93-61
Comments of The Ericsson Corporation

Dear Mr. Caton:

Transmitted herewith on behalf of The Ericsson Corporation is an original and nine copies of its Comments in the above-referenced proceeding for filing with the Commission.

Should there be any questions with regard to this matter, kindly communicate directly with the undersigned.

Very truly yours,

David C. Jatlow
Counsel for The Ericsson Corporation

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List A B C D E

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
Amendment of Part 90 of	)	PR Docket No. 93-61
the Commission's Rules to	)	
Adopt Regulations For Automatic	)	
Vehicle Monitoring Systems	)	
	)	

To: The Commission

Comments of The Ericsson Corporation

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June 29, 1993

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Summary

Ericsson, through affiliated companies, manufactures radio systems, terminal equipment and network equipment for a wide variety of telecommunications applications. Insofar as the instant proceeding is concerned, Ericsson manufacturers a wireless PBX system authorized as a low power device under Part 15 of the Commission's rules. The wireless PBX, marketed under the name "DCT900", has been developed to provide high quality, high capacity wireless PBX service to the business community. As Ericsson has stated in numerous proceedings relating to Personal Communications Services, the in-building business community is one in which the mobility afforded by wireless communications can be most useful, yet it is one segment of society which is currently denied the benefit of mobility due to a lack of spectrum allocated for wireless PBX-type products. Therefore, Ericsson developed the DCT900 system to be used on a low power basis in the 902-928 MHz band specifically to meet the mobility needs of the in-building business community and because the Commission encouraged manufacturers to utilize the ISM band for this purpose. Ericsson's wireless PBX product was designed to specifically use spectrum in the 902-928 MHz band that was not allocated to AVM systems to avoid interference it would receive from high power AVM equipment.

While Ericsson does not dispute that AVM or LMS services can provide valuable commercial and non-commercial benefits to the

American public, Ericsson believes the Commission's proposal to allocate the entire 902-928 MHz band for LMS services is not warranted since there has been no quantitative analysis showing that more spectrum should be allocated to this service than is allocated for it now. In fact, North American Teletrac and Location Technologies, Inc., the petitioners who requested the Commission to initiate a proceeding to adopt specific AVM rules, did not request that the entire AVM band be used. Rather, North American Teletrac and Location Technologies, Inc. specifically indicated that the quantity of spectrum currently allocated was sufficient.

In addition to the foregoing, the FCC's adoption of the rules as proposed would be inequitable to Ericsson and many other manufacturers of Part 15 low power devices who relied on the Commission's invitation in the *First Report and Order* in Gen. Docket No. 87-389 to develop such devices for the 902-928 MHz band. Such companies have expended hundreds of millions of dollars in research and development, marketing and other costs to develop and produce low power Part 15 equipment for the 902-928 MHz band.

Thus Ericsson asserts that the FCC should not increase the spectrum allocation for LMS services to include the entire 902-928 MHz band. In the alternative, Ericsson submits that the spectrum proposed to be made "newly" available for LMS services in this proceeding should not be made available for use for three years subsequent to the effective date of the Report and Order

adopted in this proceeding. After the three year time period, low power devices operating pursuant to Part 15 of the rules could continue to use that spectrum, albeit without any protection from interference caused by new LMS systems.

Before The
Federal Communications Commission
Washington, D.C. 20554

In the Matter of	)	
	)	
Amendment of Part 90 of the Commission's Rules to Adopt Regulations for Automatic Vehicle Monitoring Systems	)	PR Docket No. 93-61

To: The Commission

Comments of The Ericsson Corporation

The Ericsson Corporation (hereinafter "Ericsson") on behalf of itself and affiliated companies, hereby submits its comments in the above-captioned proceeding.[1] In support of its comments Ericsson states as follows:

I. Introduction

Ericsson, through affiliated companies, manufactures radio systems, terminal equipment and network equipment for a wide variety of telecommunications applications. Insofar as the instant proceeding is concerned, Ericsson manufacturers a wireless PBX system authorized as a low power device under Part 15 of the Commission's rules. The wireless PBX, marketed under

[1] *Amendment of Part 90 of the Commission's Rules to Adopt Regulations for Automatic Vehicle Monitoring Systems*, PR Docket No. 93-61, 8 FCC Rcd 2502 (released April 9, 1993) (hereinafter "NPRM").

the name "DCT900[2]", has been developed to provide high quality, high capacity wireless PBX service to the business community. As Ericsson has stated in numerous proceedings relating to Personal Communications Services ("PCS")[3], the in-building business community is one in which the mobility afforded by wireless communications can be most useful, yet it is one segment of society which is currently denied the benefit of mobility due to a lack of spectrum allocated for wireless PBX-type products.[4] Therefore, Ericsson developed the DCT900 system to be used on a low power basis in the 902-928 MHz band specifically to meet the mobility needs of the in-building business community and because the Commission encouraged manufacturers to utilize the ISM band for this purpose.

While Ericsson does not dispute that AVM or LMS services can provide valuable commercial and non-commercial benefits to the American public, Ericsson believes the Commission's proposal to allocate the entire 902-928 MHz band for LMS services is not

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[2] The DCT900 wireless PBX system is also marketed under the name "Freeset".

[3] See for example, *Comments of The Ericsson Corporation in*

warranted since (1) there has been no quantitative analysis showing that more spectrum should be allocated to this service than is allocated for it now and (2) such a course of action would be inequitable to Ericsson and many other manufacturers of Part 15 low power devices who relied on the Commission's invitation to develop such devices for the 902-928 MHz band.

Thus Ericsson asserts that the FCC should not increase the spectrum allocation for LMS services to include the entire 902-928 MHz band. In the alternative, Ericsson submits that the spectrum proposed to be made "newly" available for LMS services in this proceeding should not be made available for use for three years subsequent to the effective date of the Report and Order adopted in this proceeding.

II. Discussion

A. The FCC Should Not Allow The Entire 902-928 MHz Band To Be Used For LMS Services

Ericsson does not dispute that LMS services such as those which are being provided by North American Teletrac and Location Technologies, Inc. (hereinafter collectively referred to as "Teletrac") can serve the public interest. Indeed, such services are being provided today by Teletrac and others. Teletrac itself acknowledges that other vehicle location technologies are in existence today which provide similar services (albeit, according to Teletrac with less features and higher cost):

> There has also been marketplace experience with AVM systems. Teletrac has used the 900

> MHz band to develop and deploy its commercial wideband pulse-ranging technology. In addition, there are a number of other vehicle location technologies. Several of these services -- e.g. the Global Positioning System, Loran C and Private Satellite/Low Earth Orbit Satellite -- provide location services for transportation fleets over wide areas.[5] (citations omitted)

Neither does Ericsson assert that its low power, Part 15 DCT900 wireless PBX system or low power devices manufactured by others and authorized pursuant to Part 15 of the Commission's rules, have any legal right to protection from interference from AVM or proposed LMS systems which operate in the 903-912 MHz band or the 918-927 MHz band. These are the frequency bands on which AVM systems were initially authorized to operate and are the frequency bands on which AVM systems are authorized to operate at the present time.[6] However, Ericsson does submit that the Commission's proposal to allocate the entire 902-928 MHz band for LMS systems is manifestly inequitable to Ericsson and other manufacturers who have been invited to develop low power devices in the 902-928 MHz ISM band.

In the *Notice of Proposed Rule Making* in GEN Docket No. 87-

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[5] See, North American Teletrac and Location Technologies, Inc. *Petition for Rulemaking*, RM-8013, submitted May 28, 1992, p. 5.

[6] Section 90.239(c) authorizes pulse ranging AVM systems to utilize the 904-912 MHz and 918-926 MHz bands, respectively. Section 90.239(c)(ii)(2) authorizes AVM systems using less than 1 MHz of spectrum to utilize the 903-904 MHz and 927-928 MHz bands, respectively.

389[7] in which the Commission called for comments on its proposal to revise Part 15 of its rules, the Commission specifically proposed to permit low power operation in new frequency bands, including the entire 902-928 MHz band:

> In addition to retaining existing operating frequencies, we also propose to permit Part 15 devices to operate in a number of new frequency bands. Operation within these bands would not entail restrictions on channelization, bandwidth or type of operation. These frequency bands are as follows:....902-928 MHz.... We believe that establishment of such bands will enable manufacturers to introduce new equipment or

devices while maintaining a satisfactory RF environment for operation of licensed radio services and recognized passive users of the radio spectrum.[9]

In Gen. Docket No. 87-389 the Commission sent a strong signal to manufacturers that it wanted to encourage the development of innovative, low-power devices in the ISM and other bands. It was based on the Commission's invitation and encouragement that many companies, including Ericsson, sought to develop products which could provide valuable services without

such interference the DCT900 system simply "escapes" to a new channel thereby maintaining a very high quality voice connection. However, given the fact that the system operates with a maximum output power of ~0.75 milliwatts, the DCT900 system can not cope with the interference it would receive from a co-channel AVM system operating with 300 watts power.

Thus, when Ericsson evaluated the 902-928 MHz band as a possible home for its DCT900 wireless PBX system it was fully aware that AVM systems were authorized in portions of this band and, in order to assure adequate capacity and quality for customers, chose to design its system to operate on specific portions of the spectrum in the 902-928 MHz band not allocated for use by AVM systems. Ericsson was willing to develop the DCT900 product for the ISM band because the AVM band had already

demonstration that there is a demand for more spectrum than is currently allocated for AVM services. Also, as mentioned above, there are a number of additional radio allocations which allow operators to provide services which are to one extent or another, fungible for the services proposed for LMS.

Second, Teletrac, whose petition led to the initiation of this proceeding, did not request the Commission expand the AVM band beyond that which was originally authorized by the Commission. In fact, though Teletrac suggests the Commission adopt a number of technical rules designed to improve performance of AVM systems[10], Teletrac itself states that the two 8 MHz AVM bands (904-912 MHz and 918-926 MHz) "...provide sufficient capacity to allow the introduction of wideband pulse-ranging technology..."[11] In the absence of the proponent of the service requesting additional spectrum and/or submitting proof of the need for additional spectrum for LMS service (especially in view of the inequities that would be visited upon manufacturers of low power Part 15 devices who relied on the Commission's invitation

B. The FCC Should Not Categorically Remove Existing Part 15 Low Power Devices From the 902-928 MHz Band

At paragraph 24 of the NPRM the Commission notes that interference to LMS systems may be caused by Part 15 low power devices. It specifically points to the use of spread spectrum Part 15 cordless telephones which are authorized to operate at up to 1 watt and asks LMS operators what steps can be taken to "...protect against life-threatening failures of LMS systems due to interference from other, lower priority users of the band."[12] Ericsson is not an LMS operator. However, it does believe the Commission should investigate the source of interference to LMS systems prior to indicting all low power Part 15 devices. For example, Ericsson's DCT900 system operates with a maximum power of ~0.75 milliwatts. Ericsson does not believe that DCT900 base stations or cordless handsets operating in an in-building environment at such power levels can adversely interfere with LMS operations.[13] To the extent that interference to LMS systems can be attributed to specific systems and/or specific power levels of

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[12] *NPRM* at para. 24.

[13] Ericsson has always been concerned that 1 watt frequency hopping and spread spectrum systems in the 902-928 MHz band had the potential for interfering with licensed systems in this band as well as with low power non-licensed Part 15 systems. The maximum power afforded to such spread spectrum systems is significantly higher than that allowed for non-spread spectrum systems. Other than as an attempt to promote spread spectrum technology by providing a very significant incentive, Ericsson believes the power level for Part 15 frequency hopping and spread spectrum systems is discriminatory vis a vis systems using other new, innovative, spectrum efficient technologies.

certain systems such as frequency hopping and spread spectrum, Ericsson submits that the Commission should re-evaluate its rules which allow spread spectrum devices operating in the 902-928 MHz band to use up to 1 watt of power. One solution is for the Commission to reduce to a more reasonable level the maximum output power for Part 15 spread spectrum systems. Specifically, Ericsson suggests the Commission use the same power level or spectral density level allowed for non-spread spectrum systems.

C. The FCC Should Grandfather Existing Part 15 Low Power Devices For Three Years

The Commission has recognized that certain equities exist in the favor of manufacturers of low power Part 15 devices in the 902-928 MHz band despite the fact that some low power devices might cause interference to LMS operations. Thus, the *NRPM* requests comment on what steps "...short of removing Part 15 users ...from the band.." might be adopted.[14]

Ericsson submits the Commission has a number of alternatives. First, as set forth above, the FCC could opt to allocate only the 903-912 MHz and 918-927 MHz bands for LMS service, maintaining the status quo with respect to the overall allocation of spectrum for LMS service. That would also have the beneficial impact of preserving some of the existing 902-928 MHz band for traditional low power, Part 15 devices. Second, if the FCC does not choose the first option, it should not make the 902-

[14] *NPRM* at para. 24 as modified by the *Erratum* released May 5, 1993 (FCC DA 93-516).

903 MHz, 913-918 MHz and 927-928 MHz bands[15] available for LMS service for a period of three years from the effective date of the Report and Order in this proceeding. This would allow the 903-912 MHz and 918-927 MHz bands to be used for LMS services under the new rules proposed in the NPRM and would also allow low power Part 15 devices to continue to operate in the 902-903 MHz, 913-918 MHz and 927-928 MHz bands as they have been operating since the 902-928 MHz band was authorized for Part 15 low power use. After the three year period referred to above, Part 15 low power devices in the 902-903 MHz, 913-918 MHz and 927-928 MHz bands would be required to move to different bands or remain but be subject to the interference from LMS systems.

The three year period referred to above is consistent with the Commission's proposal to allow narrowband AVM systems to continue to operate in the 904-912 MHz and/or 918-926 MHz bands until three years from the effective date of the Report and Order in this proceeding. Ericsson submits that the equities the Commission sees as being applicable to narrowband AVM systems giving rise to a three year grandfathering period are no more worthy than the equities applicable to Part 15 low power device manufacturers who have spent millions of dollars at the FCC's instigation to develop innovative low power devices for the 902-928 MHz band.

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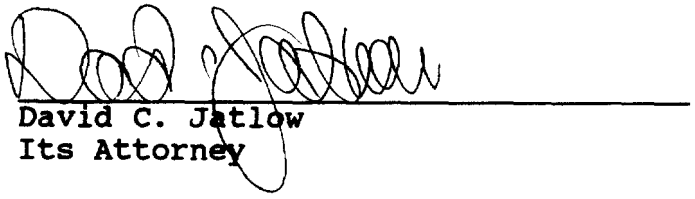
[15] These three bands are not currently allocated for AVM systems. Under the proposal in this proceeding they would be made available for LMS service.

Such a course of regulatory action would provide an orderly transition by the LMS community to use the entire 902-928 MHz band without adversely affecting legitimate equitable rights of manufacturers of low power Part 15 devices using the 902-928 MHz band.

Respectfully submitted,

The Ericsson Corporation



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June 29, 1993